

# **PRIEST LAKE SERVICE CENTER (PWSNO 1090051) SOURCE WATER ASSESSMENT REPORT**

---

**October 17, 2002**



## **State of Idaho Department of Environmental Quality**

**Disclaimer:** This publication has been developed as part of an informational service for the source water assessments of public water systems in Idaho and is based on data available at the time and the professional judgement of the staff. Although reasonable efforts have been made to present accurate information, no guarantees, including expressed or implied warranties of any kind, are made with respect to this publication by the State of Idaho or any of its agencies, employees, or agents, who also assume no legal responsibility for the accuracy of presentations, comments, or other information in this publication. The assessment is subject to modification if new data is produced.

## SOURCE WATER ASSESSMENT FOR PRIEST LAKE SERVICE CENTER

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Priest Lake Service Center, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Priest Lake Service Center* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Priest Lake Service Center is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Well Construction.** Drinking water for Priest Lake Service Center comes from a 60 foot well about 200 feet behind the shop. The store and service station are located by State Highway 57 in Priest Lake, Idaho. The well is cased from a foot above ground to a depth of 49 feet and is equipped with a stainless steel well screen set from 49 to 59 feet below land surface. The 6-inch casing penetrates 10 feet of rocks and topsoil lying over the water producing gravel and sand beds found throughout the remaining depth of the well. Current Idaho Department of Water Resources regulations call for a surface seal depth of 20 feet for public water wells drilled in unconsolidated formations. The seal depth in the Priest Lake Service Center well is 18 feet. The static water level is 12 feet below ground.

Priest Lake Service Center was mostly in compliance with *Idaho Rules for Public Drinking Water Systems* when it was inspected in September 1999. Needed repairs noted at the time of the survey were completed by February 2000.

**Well Site Characteristics.** Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineated for your well. Soils in the well recharge zone for The Priest Lake Service Center well are generally poorly drained to moderately well drained. Soils in these drainage classes provide some protection against migration of contaminants toward the well. The sand and gravel in the soil column at the well site are classed as well drained. The well is relatively shallow and there is no clay above the water table to retard vertical transport of contaminants.

**Potential Contaminant Inventory.** The 1000-foot buffer zone delineated for the Priest Lake Service Center well covers an area of commercial development lining Highway 57 at Priest Lake. Highway 57 is a potential source of every class of regulated contaminant. Gas stations are potential sources of volatile and synthetic organic chemicals. A small stream about 800 feet west of the well is probably not a significant potential source of microbial contamination because the well is classified as a ground water source uninfluenced by surface water. Situated about 300 feet east of the well and serving a single connection, the septic system also presents little risk to water quality at the well.

**Water Quality History.** Priest Lake Service Center has had no persistent water quality problems. Total coliform bacteria were detected in samples tested in September and October 1999, but have been absent from all quarterly samples tested since. Annual tests for nitrates show concentrations ranging between 0.049 and 0.85 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l.

**Susceptibility to Contamination.** An analysis of the Priest Lake Service Center well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well moderately susceptible to all classes of regulated contaminants. Risk factors related to local geology and the shallow nature of the well added the most points to the final susceptibility scores. The complete analysis worksheet for your well is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Priest River Service Center already has some important drinking water protections in place. Operation and maintenance of water system is in compliance with *Idaho Rules for Public Drinking Water Systems*. Needed repairs are attended to promptly. The system may want to cover the wellhead and fence the area around it to protect it from collision damage and to control activities that could inadvertently cause contamination. Guidelines for protecting public drinking water systems through increased security measures are available on the DEQ website, [www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm).

Every system should develop an emergency response plan. There is a simple fill-in-the-blanks form available on the website mentioned above to guide systems through the emergency planning process. Drinking water protection partnerships with any businesses in the capture zone and neighboring landowners should also be established. Some of them may not be aware that their property is in a sensitive area where household, agricultural or business practices could have a negative impact on water quality for the whole community.

The system should also investigate ground water protection programs like Home\*A\*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

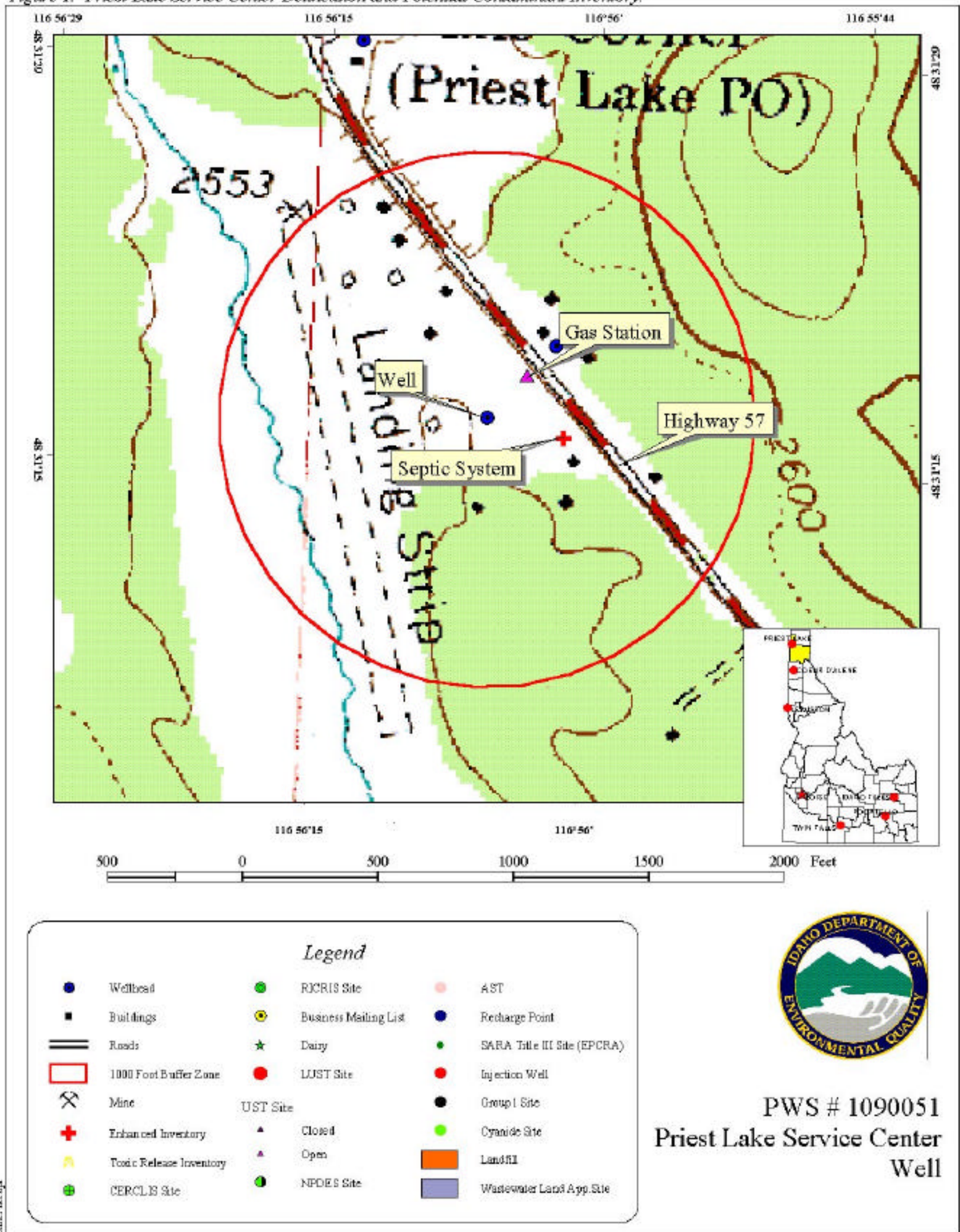
**Assistance.** Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: <http://www.deq.state.id.us>

Figure 1. Priest Lake Service Center Delineation and Potential Contaminant Inventory.



**Ground Water Susceptibility**

Public Water System Name :

**PRIEST LAKE SERVICE CENTER**

Well #

**WELL #1**

Public Water System Number :

**1090051**

8/28/02 11:04:03 AM

<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	10/24/80				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 1999				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>4</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>4</b>			
<b>3. Potential Contaminant / Land Use - SANITARY SETBACK</b>		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Sanitary Setback	COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score - Sanitary Setback</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Potential Contaminant / Land Use - 1000-FOOT BUFFER</b>					
Contaminant sources present (Number of Sources)	HIGHWAY, GAS STATION	1	2	2	1
(Score = # Sources X 2 ) 8 Points Maximum		2	4	4	2
Sources of Class II or III leacheable contaminants or Microbials	YES	1	1	1	
4 Points Maximum		0	0	0	
1000-Foot Buffer contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Buffer	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - 1000-Foot Buffer</b>		<b>3</b>	<b>6</b>	<b>6</b>	<b>2</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>5</b>	<b>8</b>	<b>8</b>	<b>4</b>
<b>4. Final Susceptibility Source Score</b>		<b>9</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>5. Final Well Ranking</b>		Moderate	Moderate	Moderate	Moderate

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

**Final Susceptibility Ranking:**

- 0 - 5 Low Susceptibility  
 6 - 12 Moderate Susceptibility  
 > 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.